

CLAIM AMENDMENTS

Please amend the claims as described below. In accordance with 37 CFR §1.121, a complete listing of all claims in the application is provided below. Notably, the status of each claim is indicated in the parenthetical expression adjacent to the corresponding claim number.

Claims 1 - 27 (**Canceled**).

1 28. (**Previously Presented**): A semiconductor memory cell including at least
2 one transistor to constitute the memory cell, the memory cell comprising:
3 a source region;
4 a drain region;
5 a body region disposed between and adjacent to the source region and the drain
6 region, wherein the body region is electrically floating; and
7 a gate disposed over the body region; and
8 wherein the memory cell includes:
9 a first data state representative of a first charge in the body region; and
10 a second data state representative of a second charge in the body region
11 wherein the second charge is substantially provided by removing charge from the
12 body region through the source region.

1 29. (**Previously Presented**): The memory cell of claim 28 wherein the first
2 charge is comprised of an accumulation of majority carriers in the body region.

1 30. **(Previously Presented):** The memory cell of claim 29 wherein the body
2 region is comprised of a P-type semiconductor material and the source and drain
3 regions are comprised of an N-type semiconductor material.

1 31. **(Previously Presented):** The memory cell of claim 29 wherein the majority
2 carriers accumulate in a portion of the body region that is adjacent to the source region.

1 32. **(Previously Presented):** The memory cell of claim 28 wherein positive
2 voltages are applied to the drain region and the gate to provide the second charge in
3 the body region.

1 33. **(Previously Presented):** The memory cell of claim 28 wherein positive
2 voltages are applied to the drain region and the gate to remove at least the first charge
3 from the body region.

1 34. **(Currently Amended):** The memory cell of claim 33 wherein, in response to
2 positive voltages being applied to the drain region and the gate, the transistor of the
3 memory cell includes a junction between the body region and the source region,
4 wherein the junction is forwarded biased.

1 35. **(Currently Amended):** The memory cell of claim 33 wherein, in response to
2 the positive voltages being applied to the drain region and the gate, the transistor of the

3 memory cell includes a forward bias current between the body region and the source
4 region.

1 36. **(Previously Presented)**: The memory cell of claim 33 wherein the second
2 charge is stored in the body region in response to removing the positive voltages from
3 the drain region and the gate.

1 37. **(Currently Amended)**: A semiconductor memory cell including at least one
2 transistor to constitute the memory cell, the memory cell comprising:
3 a source region having impurities to provide a first conductivity type;
4 a drain region having impurities to provide the first conductivity type;
5 a body region disposed between and adjacent to the source region and the drain
6 region wherein the body region is electrically floating and includes impurities to provide
7 a second conductivity type wherein the second conductivity type is different ~~than~~ from
8 the first conductivity type;
9 a gate disposed over the body region;
10 wherein the memory cell includes:
11 a first data state representative of a first charge in the body region wherein
12 the first charge is substantially provided by impact ionization; and
13 a second data state representative of a second charge in the body region
14 wherein the second charge is substantially provided by removing charge from the
15 body region through the source region.

1 38. **(Previously Presented):** The memory cell of claim 37 wherein the first
2 charge is comprised of majority carriers and wherein the second conductivity type is a
3 P-type.

1 39. **(Previously Presented):** The memory cell of claim 37 wherein, in response
2 to a first positive voltage applied to the drain region and a second positive voltage
3 applied to the gate, at least the first charge is removed from the body region through the
4 source region.

1 40. **(Previously Presented):** The memory cell of claim 39 wherein the memory
2 cell, in response to the first and second positive voltages, includes a junction between
3 the body region and the source region which is forwarded biased.

1 41. **(Previously Presented):** The memory cell of claim 40 wherein the first
2 conductivity type is an N-type.

1 42. **(Previously Presented):** The memory cell of claim 41 wherein the second
2 charge is stored in the body region in response to removing the first positive voltage
3 from the drain region before removing the second positive voltage from the gate.

1 43. **(Currently Amended):** The memory cell of claim 41 wherein, in response to
2 the first and second positive voltages, the transistor ~~memory cell~~ includes a forward bias
3 current between the body region and the source region.

1 44. **(Previously Presented):** The memory cell of claim 43 wherein the second
2 charge is stored in the body region in response to removing the first positive voltage
3 from the drain region and the second positive voltage from the gate.

1 45. **(Previously Presented):** The memory cell of claim 37 wherein the first
2 charge is stored in the body region in response to applying a first negative voltage to the
3 drain region and a second negative voltage to the gate.

1 46. **(Currently Amended):** The memory cell of claim 45 wherein the transistor
2 of the memory cell stores the first charge in a portion of the body region that is adjacent
3 to the source region.

1 47. **(Currently Amended):** A semiconductor memory cell including at least one
2 transistor to constitute the memory cell, the memory cell comprising:
3 a source region having impurities to provide a first conductivity type;
4 a drain region having impurities to provide the first conductivity type;
5 a body region disposed between and adjacent to the source region and the drain
6 region wherein the body region is electrically floating and includes impurities to provide
7 a second conductivity type wherein the second conductivity type is different ~~than~~ from
8 the first conductivity type;
9 a gate spaced apart from, and capacitively coupled to, the body region;
10 wherein the memory cell includes:
11 a first data state representative of a first charge in the body region; and

12 a second data state representative of a second charge in the body region
13 wherein the second charge is substantially provided by removing charge from the
14 body region through the source region.

1 48. **(Previously Presented):** The memory cell of claim 47 wherein, in response
2 to a first voltage applied to the drain region and a second voltage applied to the gate,
3 the first charge is removed from the body region through the source region.

1 49. **(Previously Presented):** The memory cell of claim 48 wherein, in response
2 to removing the first voltage from the drain region before removing the second voltage
3 from the gate, the second charge is stored in the body region.

1 50. **(Previously Presented):** The memory cell of claim 48 wherein the second
2 charge is stored in the body region in response to applying ground to the drain region
3 before removing the second voltage from the gate.

1 51. **(Previously Presented):** The memory cell of claim 48 wherein the first
2 voltage and the second voltage are positive voltages which, during operation, are
3 applied for a finite duration.

1 52. **(Currently Amended):** The memory cell of claim 48 wherein the transistor
2 ~~memory cell~~, in response to the first voltage and the second voltage, includes a junction
3 between the body region and the source region which is forwarded biased.

1 53. **(Previously Presented):** The memory cell of claim 52 wherein the first
2 voltage and the second voltage are positive voltages which are applied for a finite
3 duration.

1 54. **(Currently Amended):** The memory cell of claim 53 wherein, in response to
2 the positive voltages being applied to the drain region and the gate, the transistor
3 ~~memory cell~~ includes a forward bias current between the body region and the source
4 region.

1 55. **(Currently Amended):** The memory cell of claim 54 wherein the transistor
2 ~~memory cell~~ stores the second charge in the body region in response to a third voltage
3 being applied to the drain region before a fourth voltage is applied to the gate.

1 56. **(Previously Presented):** The memory cell of claim 55 wherein the third and
2 fourth voltages are ground.

1 57. **(Currently Amended):** The memory cell of claim 48 wherein the transistor
2 ~~memory cell~~ stores the first charge in a portion of the body region that is adjacent to the
3 source region.

1 58. **(Previously Presented):** The memory cell of claim 57 wherein the first
2 charge is substantially provided by impact ionization.

1 59. **(Previously Presented)**: The memory cell of claim 48 wherein, in response
2 to a first positive voltage applied to the drain region and a second positive voltage
3 applied to the gate, more than the first charge is removed from the body region through
4 the source region.

1 60. **(Previously Presented)**: The memory cell of claim 59 wherein the first
2 positive voltage is less than the second positive voltage.